Design Standards Manuals

Their meaning and use for federal designers

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Federal Graphic Designers
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Bruce Blackburn

National Endowment for the Arts
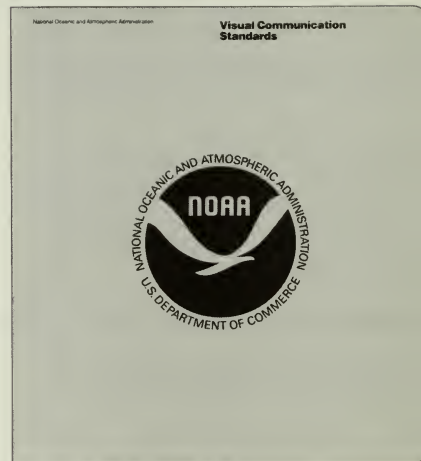
About Graphics Standards Manuals

Graphics standards manuals are emerging as prime working tools in government communication. About twenty departments and agencies either have manuals or are preparing them as an aid to producing quality, standardized communications—efficiently and economically.

A manual—the end product of a unified visual communication system—can insure against fragmentation, duplication, waste, and ineffectiveness—all targets of the Federal Design Improvement Program. That program, coordinated by the National Endowment for the Arts, is an on-going effort to upgrade government design—in architecture, interiors, and visual communication, including publications and other materials.

Good design saves time and money and enhances communication and understanding. And that is what a graphics standards manual helps to do. It is based on considerable research, analysis, surveying, interviewing, and validating—to tailor a visual communication system to an agency's unique needs. It is also a "living" document that should be subject to change as conditions warrant.

Comptroller of the Currency

National Oceanic and Atmospheric Administration
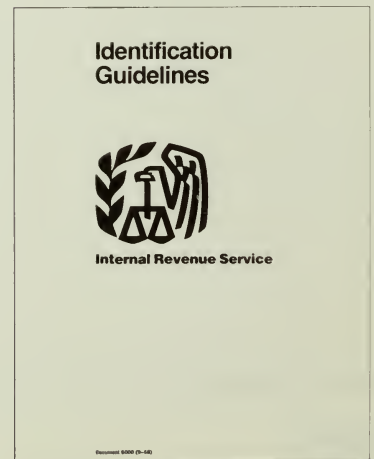
Internal Revenue Service

American Revolution Bicentennial

U.S. Department of Labor
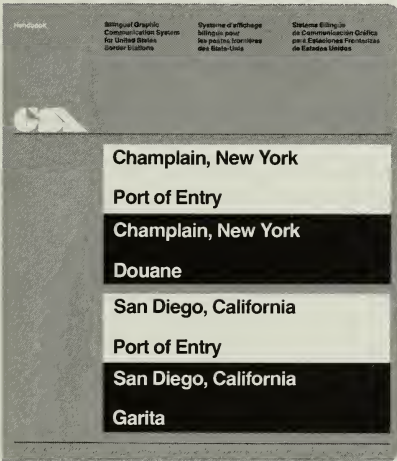
General Services Administration
(U.S. Border Stations)

National Aeronautics and
Space Administration

U.S. Information Agency

U.S. Postal Service

About the Author

Since 1973, Bruce Blackburn has been a partner in the New York design firm of Danne & Blackburn, Inc. Before that he was a designer, an associate, and then a partner in Chermayeff & Geismar Associates. While at CGA, he designed the official U.S. Bicentennial symbol, for which he received the President's Award for Excellence from the University of Cincinnati, his alma mater.

He is an active member of the American Institute of Graphic Arts and was recently elected to the Arts Advisory Council in Port Washington, New York, his Long Island home town.

Blackburn has consistently won major design awards including those presented by American Institute of Graphic Arts, New York and Chicago Art Directors Clubs, Graphis/International, *Communication Arts,* Typomundus, and Society of Typographic Arts. Articles about his work have appeared in *Print, Idea, Industrial Design,* and *Communication Arts.*

In 1975 his firm, Danne & Blackburn, was selected as consultant to the National Aeronautics and Space Administration for the development of a Unified Visual Communications System. The firm is still actively involved with NASA and, in addition, continues to serve a growing number of major U.S. corporations, institutions, and government agencies.

Blackburn believes that design is a logical problem-solving process, not just the arbitrary application of style. Because of this, he feels that there will continue to be an increasing need for the work of designers in industry and government as institutions of every sort attempt to solve more difficult and complex communications problems.

Design
Standards
Manuals:
Their Meaning
and Use for
Federal
Designers

The purpose of this proceeding is to explain what a design manual is, why we need it, why it is good, why it is bad, how it can be used, and how it can be misused. That can be easy and difficult. I have participated in the development of a number of manuals; I have participated in the implementation of the information in a number of manuals. I know it is easier to develop one than it is to implement one, and I think that is really the crux of the problem of how to accept it, how to work with it, what it means to a practicing designer in any organization, not necessarily the government.

Here is a little design fable to illustrate why a manual is necessary.

Imagine being the owner of a fine, big old house in the hillside in Connecticut, [1] let's say, that needs paint. A thing should be done the right way, so the best painters in the area should do the job. There are four really terrific painters. It's hard to make a decision, so all four painters get the job. They are commissioned to paint the house and to do the best of all possible jobs. Money is no object.

So they go to work. The four painters get together and decide that each of them will paint one side of the house. Now the first one is a hard-edged painter, and he does a beautiful job with the first elevation of the house. [2]

The second painter likes polka dots. [3] Probably his underwear looks like that, too.

The third one's mother was scared by a sailor or something—who knows? [4]
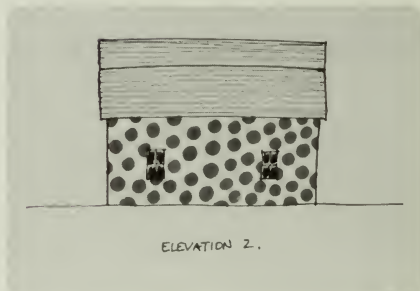
The fourth painter is a symbolist-realist. [5]

So there are four very good solutions to a design problem but no cohesion. There are four excellent people going off on their own creative paths in four unrelated directions. The logical solu-

NEEDS PAINT!

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ELEVATION 1.

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ELEVATION 2.

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tion to that problem, I suppose, would have been to decide before painting the house whether it should be polka-dotted, cream-colored, or what have you. A plan of some kind would thus be formulated instead of letting each painter go off in a separate direction.

Now this is a really awkward kind of parable, but I think it explains why we need a policy and a design manual.

Government organizations are rather large and complex. Each of us should take a look at organizations in general to see how they operate on levels other than the one in which we are participating. Every organization has a top management, whose responsibility is to set goals for the organization and to formulate policy based on those goals.

Then management creates the tools—the guidelines that set forth the policy—to implement that policy in terms that can be used by the people in the trenches, the people who really do the work for the organization. This is why there is a proliferation of management and operational guideline materials—particularly, I guess, in government. If all of one agency's guidelines were stacked in a pile, I think we would be amazed at how high it was.

Guidelines are absolutely necessary to make a complex mechanism function in a cohesive way, so that someone in Division A and someone in Division B respond to a similar problem in a similar way.

The design manual reflects a policy that the top management has formulated with respect to communications —to communicating (a) the identification of the organization, and (b) the feeling, the style, the attitudes, the goals, all of the abstract things that designers try to incorporate into visual communications. The manual is a tool intended to help the communications people

ELEVATION 3.

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ELEVATION 4.

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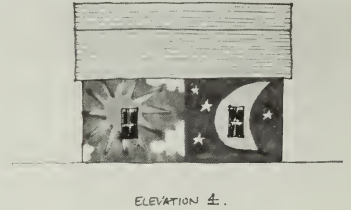
achieve a more effective and cohesive result for the organization. At its best, a design manual is only a commonly accepted matrix or structure within which any designer can develop a solution to a specific problem that is the most effective communication.

The key is that the solutions to these problems must be based on content. A designer's main problem is in relating to content. A design manual removes the need for a designer to make certain decisions that might have been necessary before the establishment of a policy on identification.

Before we begin a project, we review all the materials that were being used when we began developing the identification program. We could take our choice of sixty or seventy different ways of rendering the organization's name. We could use an acronym, we could spell out the whole name, we could use symbols combined with the name, we could use any one of sixty different typefaces.

In a sense the manual limits the ways in which a thing can be done. At its best it also indicates a level of design and an attitude of design. These elements of the manual are also important since the organization is large and communication materials emanate from all parts of it, perhaps from a hundred desks throughout the organization. The agency's top executive will want all of those communications to look as if they came from the same place, because that is the whole point of the agency's attempt to project a unified image.

I made a list of the ways in which the design manual is effective as an aid to design. First of all a manual promotes continuity throughout the entire organization. It creates a stronger communication result. As a corollary to that, it also effects greater retention by the au-

diences. The more times a mass audience is hit with a similar identification thrust or design attitude, the more the people begin to recognize the design as a kind of a shorthand, without even having to read the material. They will recognize an IBM piece, or a Westinghouse piece, or what have you, and that is definitely a goal of any design program. A design manual can indicate a direction, but it cannot fill in all the blanks.

A second important function of a design manual is to centralize and coordinate effort, so that designers in the field can talk to someone who has a picture of the large program. There are problems associated with the practice of having one person responsible for an overview of everything going on within a large organization. But that kind of arrangement tends to bring everyone together, to promote an understanding among people who have different kinds of problems. It tends to make everyone more willing and somehow more able to arrive at a consensus with respect to the general direction of the communications.

The coordinator does not design specific pieces for the people in the field. His function is to advise them on how the things they do fit into the larger picture. That is also a good deal of the responsibility of a designer. It is part of the problem, part of the plan, to make every design part of a larger effort.

The days when the designer could do great things locked in a vacuum are over. The responsibilities are much greater now, though the problem is more difficult for creative people. They must effectively sublimate their own desire to be creative in a total sense. They must solve the problem within the context of a greater goal than their own. That is, indeed, a challenge. I think every one of us has to face that every day.

The design manual promotes a single look in the identification of an organization. It gives designers in every part of the organization a reference or common ground to communicate with each other about their common problems.

The manual can be misused in many ways. For example, it should not be thought of as a replacement for a designer's creative input. A design manual cannot legislate with regard to specific everyday problems. People who put manuals together, I think, often forget that.

Many manuals are very specific with regard to the look of the design that is acceptable within the program. They go so far, in fact, in suggesting ways to approach problems that they become intimidating. The people who use them become imitators of the suggestions in the manual. I believe that is a big mistake.

A manual can suggest a direction, but it really cannot solve problems, and it cannot impose a stylistic approach to everything. It should give a feeling for the way the entire program is going, the look of things coming out of it. The manual may be considered as a reference, but as a very, very general reference in terms of expression in communications problems. I think of it as a broad definition. There are millions of solutions to every problem, and one designer cannot put them all in a manual.

The manual is very specific, on the other hand, when it comes to ironclad policy, such as the identification of the organization. No liberties can be taken with that sort of thing if there is to be any kind of cohesion in the program. That is the one point on which the manual is sacrosanct.

But the manual should not be taken literally when it comes to gridding, when it comes to cover treatments, when it

comes to just about any ongoing, recurring sort of problem. It should be used as a guide but not imitated. Once the designer begins to imitate the manual, perspective disappears. Solutions are superimposed on problems rather than being allowed to grow out of the problems. The solutions are always there, and the designer must search for them. Do not be intimidated. Do not think of the manual as saying that there must be a solid red background with a dropout, flush left Helvetica type, and so forth and so on. That would make mashed potatoes out of the designers' brains before they even got into the problem.

A manual can also be misused by using it to fight city hall. I have experienced this both in the commercial world and in government projects.

Many times when these programs are initiated from above, they are thrown into everyone's lap, and everyone is told to comply or die. That does not go down very well. So a lot of people react by becoming jailhouse lawyers in the sense that they will go through the manual with a fine-tooth comb to find an inconsistency. God knows there are inconsistencies, because the people who put the manuals together are human. The jailhouse lawyers use these inconsistencies to fight the system. They do something that will use an inconsistency to make their point: The manual is not perfect; therefore how can the guidelines possibly be followed?

I think it must be recognized that these manuals are here to stay. In the main they are beneficial. The guidelines really are not a constraint. They are intended as an aid, and when they are properly used, they can be an aid.

If there is an inconsistency in the manual, it should be pointed out to the coordinator. Be a friend. Tell him the

inconsistency will be badly received down the line. Tell him it ought to be changed now, before somebody makes a big issue of it. We ought to get the thing on the track.

Many people refer to design manuals as bibles. The Bible was written pretty well, I guess, even though it has its inconsistencies, too. But a manual, a communications program, must be in a state of constant development and metamorphosis. It goes through changes as a result of the people who are involved in it, who contribute their own thoughts, constructive thoughts, as to how it works and does not work. Somehow a consensus is reached on the basis of all this input, and a change is made.

A controversy is going on at the National Aeronautics and Space Administration (NASA) right now about a typeface that we specified as part of the identification system. It is difficult to reproduce within the government printing system. The typeface was Helvetica light, which is a beautiful typeface. It works very well in the context of NASA's identification system. It seems, however, that when it goes through the government printing system, it often loses a lot. So people have told us we should consider using the next weight up in the Helvetica family, instead of the light, so we can eliminate some of these reproduction problems that we're going to be running into from now until doomsday.

That is a good point and a constructive thing to say. We have all been thinking about it, and we might have to do something drastic about it; we aren't sure yet. I'm not out in the field doing the stuff, and because I am a consultant it's not my baby they are killing, it's yours. Somehow the people who are designing these things day to day are very disappointed when the finished results

come back. They are the ones who must speak up and tell us it's not working. We have to figure out how to make it work.

So if at all possible, try to relate to the program in a positive way instead of a negative way.

The third point about misusing a manual, or really I guess it would be more accurate to say misusing a program, is improper administration from organization headquarters. I have been through just enough of these things to have a lot of scars, and I think it is a mistake to have the program without giving the responsibility for the program to someone fairly high up in the organization. It is a mistake because the ship is rudderless and there is a minimum of communication among the people who are really implementing the system within the organization. In a sense they are like those house painters. The line must be drawn somewhere. Someone must be given responsibility and the final authority in the interpretation of what is in this manual. Otherwise there will be as many interpretations as there are people doing the work. So that is something I know rests with top management. Sometimes it is done halfway or not done at all. I just happen to feel very strongly that coordination and overview are among the more important elements in any of these programs.

AMERICAN REVOLUTION BICENTENNIAL 1776-1976

It might be interesting to you to know how the Bicentennial symbol came about. The Bicentennial Administration met and discovered it had no flag nor banner to live under. That made the administrators very uncomfortable, so they decided to hire some designers to give them suggestions about what their emblem should be.

They went through an interviewing process and accepted proposals from four firms outside the government, but they couldn't decide who would best solve their problems. So they decided to hold a competition among the same four firms and recruited a jury of people from the business world and from government. They provided a small honorarium to the four firms and told them to submit their proposals to the jury. There were probably thirty or maybe a few more entries in this competition from the four firms. The jury chose the "fat star," as I call it, which was one of my entries. As a result, Chermayeff & Geismar, with whom I was associated at that time, was the contractor for developing guidelines for the use of the symbol and for designing a lot of the administrative materials for the American Revolution Bicentennial Administration (ARBA) and some other related project work as well.

Since I had designed the symbol, it fell to me to put together the guideline material for the symbol, to write and develop the manual,[1] and to work with ARBA and its design director Jack Masey to ensure that the whole thing came together, which was an interesting process.

The Bicentennial symbol is the kind of thing that happens only once in a lifetime. It is very different from a corporate trademark or even an agency identification, in the sense that the designer has so little control over what happens

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to it. Most of the control was in the form of legislation that ARBA put through the Congress to prevent the symbol from being exploited commercially. They were very, very rigid about that.

The Bicentennial manual had to be the broadest and most general kind of thing, in order to cover the eventualities that are inherent in a celebration like the Bicentennial.

Each of the fifty states, for instance, would probably have its own Bicentennial symbol; how could the one be used with the others? Treatment of endorsements and commercial uses, and so forth and so on, was really part of the initial design problem as well. The symbol had to be freestanding, and it had to stand up well against its competition, its visual competition.

It was an interesting thing to go through.

The Bicentennial manual is in a saddle-stitched booklet format. We set out to use a binder format, but suddenly realized that it was very impractical to do that. The number of people to have access to this information was pretty astounding, and the cost of binders for all these people would have been astronomical. So in the interest of economy, we consolidated everything into a booklet format.

An interesting note, by the way, about the symbol. It was not really designed with the typography running around the star: That was not the intent. The typography was an element that was under the star and provided a kind of a base on which the star was sitting. We discovered we had a tremendous number of designers in ARBA who held a committee vote, and somehow the type appeared around the symbol from then on.

The symbol uses a five-pointed American star, one of the very few vis-

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ual elements we could pull out of revolutionary times that held up as a contemporary form. The star is more or less wrapped in bunting, in red, white, and blue stripes. This has the effect of incorporating the American colors and flag and also, just as important, softens the impact of the five-pointed star. It was one of my beliefs when I was working on this project that whatever was done should not be a hard-edged, aggressive, militaristic symbol. We had, as a country, come through that kind of period, and it was my belief that we ought to be looking to a more peaceful future. This belief affected what I did with the design of the symbol.

The symbol was designed to be used in three different ways: the three-colored version; a black and gray version (for one-color printing), which somehow simulates the color in the middle; and a solid black and white version (also for one-color printing)—either against white or in reverse.[1]

Use of the Bicentennial symbol required special authorization by ARBA. If, for instance, ARBA received a proposal for an Indian dance in Main Street, Fargo, North Dakota, and decided that it would give that event its blessing, it would issue a certificate of recognition. At that point, all the literature promoting the event could use the Bicentennial symbol along with a typographic device at the bottom, stating that the event was recognized by the American Revolution Bicentennial Administration.[2]

The manual also discussed the type styles recommended for use with the symbol [3] and illustrated a wide range of things that could not be done with the symbol.

It included recommendations on the use of color on different colored backgrounds,[4] to eliminate the use of the


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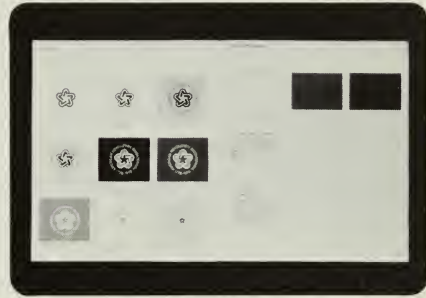
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colored symbol on a blue background or some such thing.

We illustrated in the manual the construction of the symbol, which is very complicated.[1] That was shown to facilitate reproducing the symbol in very large sizes. In Phoenix, for instance, there is a version of the symbol that is 325 feet in diameter on top of the fairground field house. There have been other similar things. Somebody rendered it in flowers in Florida, so presumably some people have used the manual to scale up the symbol.

The manual contains a section devoted to reproduction artwork.[2] We ended up showing the symbol with a kind of feathered connection between the red part of the symbol and the blue part of the symbol for two-color reproduction, and we provided solid artwork for reproduction in one color. I can't count the number of times I have seen the artwork for the two-color version with the little feathered connectors reproduced in one color just as they are in the manual, with no regard to the instructions that were printed right beside the illustration. Somehow that was a failure in communication. I don't know how we might have overcome it, frankly, because people just don't seem to want to read this sort of thing.

The Bicentennial Administration used the symbol on some materials such as stationery items, a newsletter, and informational materials they mailed to people who inquired about the Bicentennial programs and the symbol.[3]

We did several other things for ARBA. One was an official poster that showed only the symbol, with no other content. The other was a ten-second animated television sequence; the background music was "Yankee Doodle Dandy."[4] I don't know whether or not this ever reached the air.
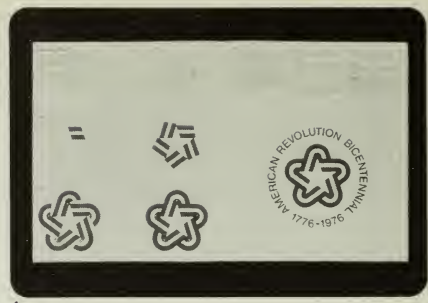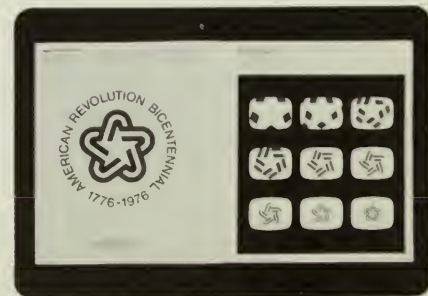

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The manual demonstrated the treatment of specific problems, illustrating a solution for report covers (there were many reports concerning proposals on programs and activities for the Bicentennial celebration) and for marking a vehicle.[5]

We discussed earlier the problems of a state or "recognized" activity attempting to use its own Bicentennial symbol in conjunction with the U.S. Bicentennial symbol. Mt. Rushmore was one of the first things chosen to receive ARBA recognition.[6] We suggested that the one symbol remain away from the other symbol as much as possible. There was heated discussion about that suggestion in some instances, and in some cases the two symbols were shoved right together.
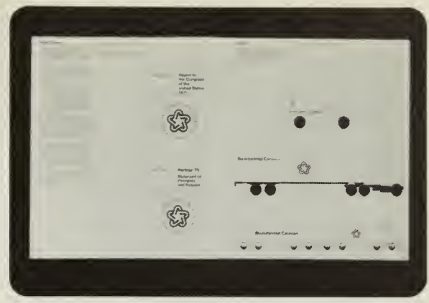
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NASA

National
Aeronautics and
Space
Administration

Let's move on now to the NASA Graphics Standards Manual.[1] Perhaps it is in order to give some background of our involvement with NASA. NASA was one of the first agencies to participate in the Federal Graphics Improvement Program of the National Endowment for the Arts. Danne & Blackburn ended up on the list of bidders for the project, and we were awarded the contract to design the identification program and subsequently to develop the design manual.

NASA's image was a very difficult problem to approach. NASA has had, I suppose, more publicity and better publicity than any other agency in Washington, taken over a span of ten years—I'm alluding to Walter Cronkite as the extra astronaut. All the news-media coverage that came to NASA as a result of the space program gave it an identity all its own. So, when we got into the problem of what we should do to improve the kind of space-age Buck Rogers visual image that it had been projecting, we came to the conclusion that everybody knew it as NASA, the acronym derived from the agency name, rather than the National Aeronautics and Space Administration or anything else.

We decided, then, to approach NASA's identification as a logotype based on the "NASA" acronym, an IBM solution if you will. We tried to give the logo a contemporary look and one that had something to do with precision and scientific capability and reliability. We ended up with a very, very simplified continuous-stroke letter form. Another name for the old NASA symbol, by the way, was the "meatball," and someone remarked that NASA had traded in the meatball for some spaghetti.

I think we had a very good situation in dealing with NASA in that we had Dr. James C. Fletcher and Dr. George Lowe, the agency's two top administra-


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tors, who were enthusiastic about this program and, in fact, really wanted to participate in it. They wanted to be in it all the way. When we finally arrived at our recommendations and a consensus among the two of them and the group that was advising them, they were quick to respond with their endorsement of the program, and a very positive endorsement at that. Dealing with them was not too different from dealing with a corporation, a commercial client. They were very organized in the way they approached the problem, and once they had made their decision, they ran with it against some pretty formidable opposition, as it turned out. I think now, after a little more than two years, the results are starting to show up. In fact the people who are working with the program are more and more happy with it and with the kinds of things they can do within this new framework, as opposed to what they had before.

It might be interesting to run through the planning of this manual—what was in our minds, what use we thought these things would be put to, and so forth—to give a feeling for how one design firm approaches the problem of dealing with the attitudes of many people who must implement a program.

First we tried to organize the manual in terms of content.[1] In the first two sections we covered the fundamentals. The remaining sections were devoted to various areas of application.

The first segment of the manual, dealing with the NASA logotype, is really the law, if you will, in terms of identification. We tried to narrow that down and spell it out carefully, so that everyone would have a good reference point for the use of the logotype, the use of the words around the logotype, and the use of reproduction art. Sections pertaining to stationery, forms, publications, and so
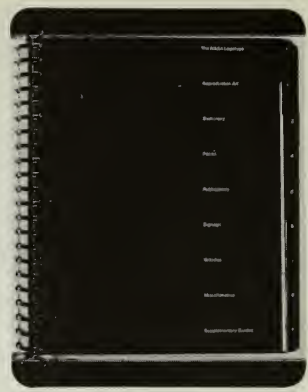
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forth are more open to interpretation.

The section of the manual concerning publications turns out to be the largest in the book, and I think rightly so. In most federal agencies, publications probably present the greatest number of design problems. There should be a lot of guidance in that area.

The manual has not yet confronted the problem of signage in any meaningful way; sections on vehicle identification, aircraft identification, and uniforms and patches are under way.

Page one in the manual was a letter from Dr. Fletcher stating his endorsement of the program.[2]

The first section of the manual gives an explanation of the logotype, its development and its form.[3] Then it immediately examines the problem of distinguishing the identity of the agency as an entity from the identity of any one of the ten NASA centers.[4] NASA is organized as a group of semiautonomous research centers, flight centers, and space centers spread all over the country. Each has its own director and its own management system, and each operates pretty much on its own. In the past the NASA name and identification have not been used consistently in center material. The centers put out a lot of very provocative material that the agency wants to be associated with and should be associated with, so we set about to get the agency its just due.

One of our problems was to make sure that the centers were identified in a strong way, in a clear way, and in a way that did not submerge the NASA identification, which as a matter of policy had to go along with the center's name. We provided for a very clear and strong center name and also a very strong NASA identification to accompany it. In principle that is what happens on all center communication material.

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Then we discussed the use of color.[1] We have a NASA red, which we realize cannot be used in all cases. In fact in about 90 percent of the cases, it is not possible to use it. So we spoke in terms of use of the red, when possible, as an identifier, and use of black and/or gray when possible as a second color and as a way of showing the logotype. That basically was our color system.

We also displayed, as in the Bicentennial manual, some ways the logotype should not be used.[2] We had a lot of fun with that.

We showed a grid drawing of the logotype to allow for its reproduction at a large scale.[3] Some implementation of this is going on now: Some giant hangars and outbuildings in some of the centers are having the new logotype applied to them at a rather large scale.

The manual includes reproduction artwork for the logotype and for the agency identification, which broke down into two basic ways of presenting the information, with two lines or four lines under the logotype.[4]

We tried to give the centers a full treatment on this reproduction artwork for center identification so that we would immediately have the consistency that we were striving for. We tried to present the artwork in such a way that each center could clip from these pages a piece of artwork to use in preparing a publication or what have you. It would include not only the NASA name and the center name, but also the center's address and phone number. That is a standard procedure in identifying the centers on their publications and promotion material.[5]

The letterhead for the center stationery differs from the letterhead at headquarters in that the NASA logotype is pulled over into the right-hand corner of the page, rather than appearing at the

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upper left above the full name and address, as it does on the headquarters letterhead. We made that distinction to differentiate the centers from headquarters and to give as much emphasis to the center names as possible.[6]

We also tried to cover as many bases as we possibly could on the preparation and design of a publication in relationship to the identification program and, in fact, the design standards, if you can call them that, that we were trying to promote. In this written section we discussed just about everything that goes into a publication. We faced up to the problem that typography may not always be available and may not always be desirable for a given problem. We suggested that it was acceptable, and in fact in some cases desirable, to use alternatives to the Helvetica family,[7] except in the identification elements. The Helvetica series of typefaces is part of the identification system and recommended for use in publications and other materials as a text face.

So we said, for instance, that Futura, as a sans serif alternative, would be acceptable, as would Times Roman. We also tried to give a brief example of the way Times Roman looks with Times Roman bold as a heading face juxtaposed against Helvetica medium as a heading face over the Times Roman text. We tried to mix them up so that we could show the serif letter form in use with the sans serif letter form.

We included Garamond here, because it is one of the very classic text faces that works in much the same way as Times Roman. It is a little lighter, has a little more finesse, and is a fantastic book face.
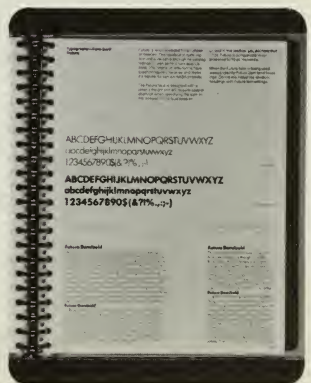
We offered only four pages of suggestions for publication typefaces, but there is an understanding that it does not stop there. It would be perfectly ac-

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ceptable, for instance, to use Goudy, or Bookman, or some other book face in a publication, if it were used in a way that was in line with the overall goals of the program.

We tried to tell our people that we were not trying to tie their hands. We know they have limitations that are hard to overcome. If they have to go halfway across the country to get Helvetica or Times Roman, and they have a suitable alternative, that's fine. Bob Schulman, NASA's graphics coordinator, works with them to determine that in fact they do have a suitable alternative. He is the interpreter; he can make that judgment with them.

The point here is that even though we show these things in the manual, we are not really trying to say this is the law. The law is in the front of the book, in the discussion of the logotype and the agency name, and how those two things go together, how the center names are rendered, and so forth.

But in the back of the book, we really aren't talking about inflexible law. We're talking about suggestions and a feeling for the direction in which we wanted people to go with the publications. So we took representative examples of NASA's many publications. We divided them into categories that we thought were identifiable, and we dealt with each of the categories as a group. In each group we tried, first of all, to put together a suggestion of how the publication covers could be treated. In nearly all cases illustrated, we used NASA identification on the cover of the book, which seems to be what people want to do. This is difficult to do because it adds an extra element, and it is very hard to use. It was our feeling that in this particular case we had not a symbol, but a logotype, which was really a typographic element that could be inte-

grated into a cover design.

So, for instance, we show three folders that are a part of a seemingly endless series giving general information on programs and projects under way at NASA.[1] These three folders had already been produced using the same graphic illustrations but a different typographic treatment. Each folder had a completely unique titling style, which was shown very large on the cover. The typography had become more important than the illustration.

In other words, there was a scale problem. So we illustrated the manual with three of these folders, using nice illustrations already done for us, and we showed a systematic approach to titling publications of this sort. The illustration should be allowed to take over. Then there are three things that look very good in a row.

The principle we tried to communicate is that a series of publications will work out better if a systematic approach is adopted than if a new start is made for every new publication. We were not saying that this is the only way to do it. All these manual illustrations are really schematic diagrams: They express certain principles that we believe will enhance the effectiveness of the design and identification program at NASA.

This page of the manual also presented three hypothetical problems. We invented some titles, used some photographs, and arrived at a completely typographic solution. These three examples coupled with the series represent a fairly comprehensive range of cover treatments for leaflets and folders.

The manual goes on to illustrate journals and technical publications, which are an entirely different kind of problem.[2] When we were developing the logotype, we found that it worked very well as what we call a "stem word": We use

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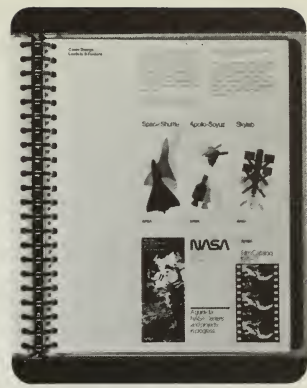
the logotype as an identification element and simultaneously as part of the titling or typographic device that leads off a publication. *NASA Tech Briefs* does not need another NASA anywhere on the page. Integrating the logotype into the title cleans up the cover and makes it more dynamic.

We also made some suggestions (which are being implemented) about handling diagrams. Our ideas were very simple: for instance, outlining a diagram so that the outline reflects the grid of the publication—a very simple thing, which is not often done in a technical publication. Often these diagrams float between columns of type, with lots of air around all the elements and therefore not much cohesion on the page. This very simple addition of a thin line outlining the diagram tends to bring everything together a little bit and make it more solid. Typography is architecture, and architecture requires structure.

We have also shown in the manual a photographic treatment leading off a technical publication. Its treatment is similar to that of the diagram.

Some of the publications we discussed here are monthly or bimonthly publications. Once the mastheads are done and a style is determined, they more or less take care of themselves. From that point on, the designing requires a very sensitive handling of the content. The designer's role, then, is not to redesign the masthead every time the publication goes out. First, he does not have time to do that, and second, for him to do so would destroy the continuity. His role is to put the publication together in a way that effectively communicates its content.

We gave some examples of news publications because a newsletter or news magazine cannot be treated like anything else.[1] One example is a head-

quarters publication, *NASA Activities,* which is NASA's house organ. The other is a center newsletter monthly, the *Langley Researcher.* Both designs were developed by Danne & Blackburn as prototypes for future publications of this sort in NASA.

NASA Activities looks very good, I think, after about a year. And the *Langley Researcher*, although it did not develop precisely the way we anticipated, looks pretty good. So I think we have begun to build an awareness of good design by selecting a few publications as typical situations, doing them the way we thought they would best hold up, and presenting them to everyone not as a guideline, but as a way of approaching a particular kind of a problem. A newsletter is not like a leaflet cover, is not like a sign, is not like anything else.

We move on to an area that we called quality publications.[2] This area may be somewhat unique to NASA, in that NASA has a history of putting out excellent publications that document and record its major projects and accomplishments. The manned space program is the main example, although NASA does many other publications in the scientific field.

We made two points here. NASA is an organization that is really very involved in the future. We were trying to say that more ought to be done with such provocative material. The designers should be able to do more than just put a typographic cover on some of these publications that have very far-reaching implications and are very provocative to their audience. We wanted to put something behind that, to get into it, to give it some life somehow, to try to make an idea of it. To illustrate that point, we developed a hypothetical publication that we called *The Future*. For

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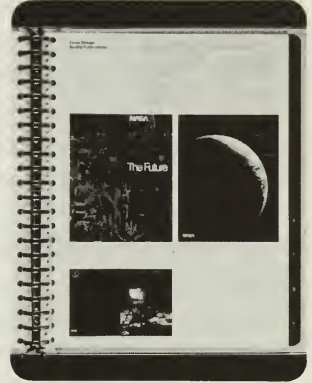
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the cover we used the scientist's blackboard with equations scrawled on it as a background for the title and logotype.

As another hypothetical example, we took a stock NASA photograph and designed a cover for a publication that we called On the Possibility of Extraterrestrial Life. We used a style in which the typography truly becomes an illustrative element and enlarges the meaning and the sense of the pictorial illustration. To do the illustration as a straight photograph with a typographic title in the upper left-hand corner would not be as good as doing it this way, with the typography integrated with the photography. We tried to say that the possibilities are not all predetermined or limited.

We worked out a way to incorporate in publication identification material the mission patches that were designed for each of the manned space missions (they have, in fact, been designed for other activities in NASA, as a matter of professional pride as much as anything else). The people who were involved, and particularly the astronauts who were involved in the manned space program, always developed their own graphic device, which they translated into a patch to put on their flight suits and other gear at the time of the mission. These devices occur with regularity in all the publications that document the missions. There is a similarity between the problem of using this mission identification and the problem of local Bicentennial project identification. The solution here is similar: If a mission symbol must be included, it should be kept as far away as possible from the NASA identification so there is no unnecessary visual competition between the NASA identification elements, which are permanent, and the mission symbol, which is transitory.

The next category of publications is

casebound and educational publications.[1] These, too, are hypothetical examples except for *Space Mathematics.* In selecting that particular cover as an example, we hoped to show that it is possible to do very nice typographic solutions to booklets or publications that neither suggest nor require an illustrative treatment. *Space Mathematics* was one of a series of perhaps ten NASA textbooks that concerned the space sciences. We did not suggest a series solution here, but we did consider this an appropriate example of a typographic solution.

We invented another hypothetical case to show the use of Garamond as a display face, as opposed to Helvetica, which would be preferred if the manual were read in a literal sense. The use of that serif traditional letter form for Apollo II with the delicate drawing of the three astronauts seems to be just right. As long as the identification portion that must appear on every publication is treated exactly as described in the manual, as long as no change is made in that, then this kind of thing is fine. In putting out as many publications as NASA does, typefaces have to be mixed every now and then, or else the publications will become very, very boring.

Design decisions always boil down to an assessment of how appropriate it is to go in one way versus the other way.

We had one more example of a typographic cover, again using typography as illustration, this time trying to make the typography look as if it is going off into space. There is nothing to be taken literally here, except that there are a lot of possibilities. Examine the possibilities, dig into the problems, get a little under the surface, bring out the possibilities and potentials that somehow were not known to be there.

Then the manual moves on to press

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kits and telephone directories and things of that sort.[1] We showed a series of press kits that illustrate first, a very strong institutional approach, using a large NASA identification and small titling; second, a very strong center identification, with the center name, in fact, as the name of the publication—a press kit for George Marshall Space Flight Center; and third, a press kit for a specific NASA project. In that last example we used the Futura typeface as opposed to the Helvetica typeface because it worked better with that word and it made a stronger presentation. So we have again broken out of the handcuffs and done something that is not a literal interpretation of the system.

We used three telephone directories as illustrations, too. One showed an effective use of two-color printing; one showed a straight typographic approach; and one used an illustrative approach. The example demonstrating the typographic approach also communicated a strong institutional message.

What we are trying to do with this presentation is to say that there are appropriate and inappropriate ways to deal with certain kinds of publications, and in this area it is not wise to go too far out. For instance, we had an experience with the NASA headquarters telephone directory in which it was designed in a highly decorative style. It had a lot of elements on it that were semi-illustrative; the typography was done in four, five, or six different styles. It is the kind of thing that I would turn cover down if I had it on my desk, but I would be in trouble then, too, because the back cover was horrible.

It is necessary to look at what happens to these things when they go out, how they're used, and what their life expectancy is. Are we literally asking


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someone to keep this around in front of him for a year? If so, are we going to give him something that he can live with, or are we going to give him something that he will really hate and will hide? That would impair the basic usefulness of the publication.

All these things are part of the problem and the designer's concern. I think I would not mind living with any of those examples we have used in the manual for a year. I might get tired of the one using the illustrative approach; I think that probably stretches it farther than the other two. The point is that we must take into consideration the ultimate use of these publications and the effect of their design on the user of the publication.

We showed two examples of posters, one real, one not.[2] The hypothetical poster uses stock photography from one of the manned missions (the first space walk). One of NASA's problems has been to get across the idea that space technology is also useful on earth, that the taxpayer is not pouring his money completely down the drain. So we toyed with the idea of doing a series of posters that expressed that thought in a very strong way. In the space-walk poster, in the lower right-hand corner, there is a small diagrammatic illustration of a man with a heart: We were making the point that the state-of-the-art cardiac pacemaker was developed as a result of NASA's pure research.

The other poster illustration demonstrated one of the very first applications of the program, a very nice poster on NASA's weather satellites. The poster shows a handsome and effective use of illustration and typography.

The idea that these are posters comes across quite well because of the scale usage, the elements relating to
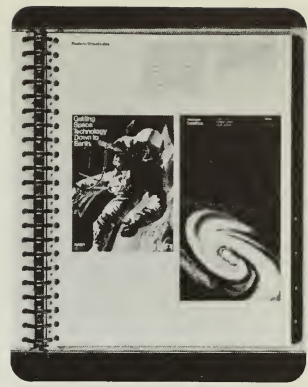
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one another in a certain scale relationship. They feel like posters.

We hope that when people do posters—even posters that have as much content as the one about the pacemaker—they will think in terms this simple. The idea should be reduced to the point at which the communication is instant, and its elements should be used in ways that provide maximum visual impact, pulling people in and making them want to know what is really going on there.

In the last part of the publications section, we got into the question of a grid.[1] Essentially, the point is that there must be some underlying structure in the design that runs throughout a publication, making it a cohesive unit, making it hang together. We gave a basic diagrammatic illustration of how to set up a grid, a very simple two-column grid.

A grid really includes a cover design.[2] There are ways to relate a cover design directly to an interior grid format. We've given an example in which the photographic panel on the cover becomes the typographic panel in the text; nothing intrudes on the band of space at the top except the titling devices and running heads. We also gave examples of two other approaches to gridding a publication. These are all hypothetical situations.

We then decided that it would be useful to take the categories of publications that we had dealt with earlier and suggest some diagrammatic possibilities for gridding them. Each form has its inherent limitations.
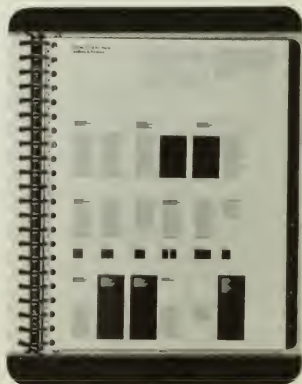
For instance, with the leaflets and rack folders, not much more can be done than a one-column grid.[3] A lot can be done within that one-column grid format depending on the content and the thrust of the publication, so we showed it in three different ways.
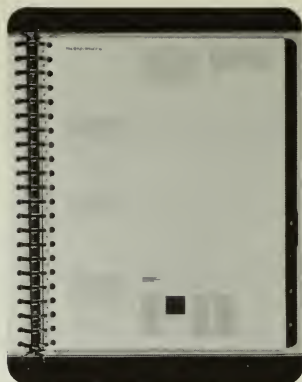

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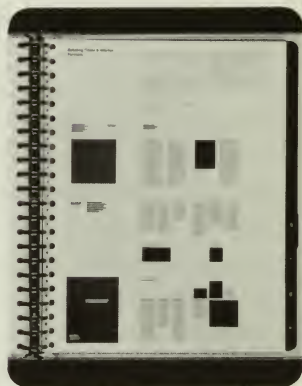
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A different sort of problem arises from the journals and technical publications.[4] The technical nature of these publications gives them a more bookish look, a kind of academic feeling.

Still, there are ways to give it relief. We give one example in which there are diagrams. That's a very heavy text solution. On the top and bottom, some white space runs throughout the system, giving a little more relief.

Another example shows a lot of illustrations, photographic illustrations presumably, with a fair amount of text, but a lot of relief in the publication. We're trying to say that even though these publications are technical and the people who read them really want to feel it, they still have to be interesting and easy to read.

We gave examples of three different ways to approach a news publication.[5] These are only suggestions and a few of the ways of looking at a problem. They probably do not relate directly to anyone's specific needs, but they might give an insight into a way of handling a certain kind of material.

At the back of our manual, we have several pages relating to real problems that have not yet been dealt with in any great detail. The signage guidelines were developed specifically for the Kennedy Space Center in connection with the Apollo-Soyuz joint mission with the USSR.[6] The people at NASA wanted to dress up the base and were excited about the new program, so we did some development work for them and gave them a start—gave ourselves a start really—on making suggestions about signage for all the centers. Since then a complete signage program using these guidelines has been developed and implemented by staff designers at the Hugh L. Dryden Flight Research Center in California.
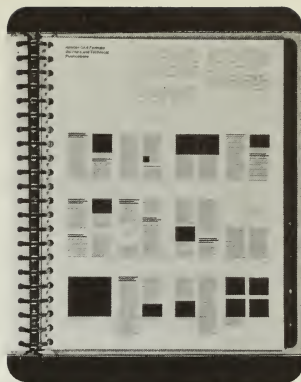
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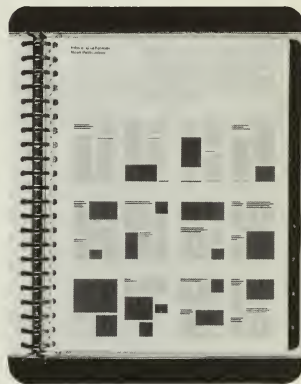
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Signs are the kind of thing that I think should be controlled a little more than publications, for instance, because they have permanence associated with them in the same way that the logotype or the identification elements do. I really think that the coordinator and the headquarters management should lay down certain firm rules about signage.

We developed a stopgap way of getting the new identification elements on existing forms and in advance of any real study on the problem of the overall design of forms.[1]

We did a purely hypothetical page on vehicles. It was to say that we are working on it.

Another example, no longer hypothetical, is our space shuttle marking scheme.[2] It has undergone a lot of changes, but it is under way now in the shuttle training vehicles that are being used.

We are still at work on the problem of how to mark NASA's aircraft fleet. NASA I, the Administrator's aircraft, was the first aircraft completed. We are now working on the remainder of the fleet, and it is a considerable job. NASA has aircraft shaped like needles and aircraft shaped like elephants, so the problem is difficult, but it seems to be developing nicely.

The concluding section of the manual discusses two different kinds of certificates and awards.[3] We retained the NASA seal on certificates to be used mostly for ceremonial and historical occasions of one sort or another. On award certificates—for special achievement, for a suggestion that was accepted, and that sort of thing—we used the NASA logotype as the identifier.

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I'd like to encourage questions, and we'll try to mix it up a little bit.

Q: Bruce, I think it would be interesting for the group to know how long the research, analysis, interviewing—whatever contributed to developing the NASA system—went on before you came up with the recommendations. We see the end result, but there must have been some sweat. Tell us a little about the sweat.

A: I guess I skipped that because I want to forget it. But I think that there was a period of about three to four months in which we did a series of interviews with management people in NASA and saw some of the people from the centers. We tried to get a handle on what had been happening in all of these areas and to get a feeling for the problems as seen by the people who really have to deal with them day to day. We compiled large files full of notes, of comments from different people, trying to get a feeling for how certain things came about within the organization, where they came from, who was responsible, and so forth and so on.

We submitted a preliminary report in writing—not a visual presentation, but in writing. In it we more or less rehashed what we had learned in the research and interview phase and the conclusions that we had reached. Our conclusions were of a general nature in all regards except that NASA was really known as NASA, not the National Aeronautics and Space Administration, and that that would probably be the major thrust of our visual presentation. We wanted to get that out on the table so that if anyone had any predisposition toward some other approach, we would know about it in a hurry and not waste all the effort that would go into develop-

ing the logotype. So all that happened before we ever really put our pencils down on the paper and tried to design the thing.

It's a tedious process, but one that is really necessary to get yourself well grounded in the organization, understanding how it operates, what is really happening there, what the administrator really feels is the future of the organization, which way it is going, what their public relations problems are, and so on. We really had an earful of that before we even started to think about the final design we recommended to them.

Q: You put great emphasis on the logo. Why did you use red, and why did you take out the horizontal stroke on the A?

A: Well, the red was used because it was a livelier, more aggressive color than the others we had considered. We considered blue, which everyone uses, for instance. In fact, NASA had used blue until this program got underway, and we felt that it was just too restful. It looked as if NASA was lying back, not pushing forward, and we felt pretty strongly that the form of this logo needed that kind of aggressive color to make it really come alive.

We decided to treat the A as we did by a process of elimination. We had started designing a logotype, and we brought it back, back, back, simplified it more and more, and finally it became apparent that the A's in there really didn't need cross strokes to be legible. Also, when the cross strokes came out, the logo had a kind of a lift to it that we liked, and it looked more unique and contemporary. Everything seemed to be going for it when the cross strokes came out. When the cross strokes were

in, it became a more pedestrian kind of solution. So we fought very hard for that. I'm very happy the cross strokes are not there. I think that's really one of the things that makes the logotype as good as it is.

Q: In the manual, are you saying that the logotype doesn't necessarily have to appear on the cover?

A: The answer to that question is no. The real requirement is that at some point, usually on the front or back cover, some signature should be shown for the agency or center producing the publication, but we really have no hard and fast rule about how that is done. The reason for that is to allow as much flexibility to the designer as possible to eliminate that one extra element that might really cause trouble in a good design. If it must go on the back cover, fine.

Q: Have you ever noticed that the spaghetti you used to write the word NASA is very similar to the spaghetti you used to wrap your fat star?

A: That is interesting. No, I haven't noticed.

Q: And the Helvetica light similarities, also?

A: Well, that's true. The problem is to set up a system that will last for a long time. There are many beautiful letter forms that can be chosen but that will date a project very quickly and that are very active design elements in and of themselves. In the case of both the Bicentennial symbol and the NASA identification, the object was really to "neutralize" the typography that was shown in direct juxtaposition to the logotype. If it should also appear to be a

very contemporary letter form, the choice is limited to very few typefaces, the best of which, in my opinion, is the Helvetica family. So the idea was to neutralize the effect of the typography, to make it harmonious and contemporary. It should not take over from the logotype, which is the major visual element in the identification system. In developing my own sensitivities to this sort of thing, when I'm dealing with a subject like NASA, which is all science and precision and future-orientation and all the buzz words you can apply to it, I just don't see going back to the 19th century for the typeface. It may look great in the beginning, but down the line a few years, it's liable to look very dated and outmoded.

I discussed earlier the importance of leaving the designer free to concentrate on the content of what he is doing. The more neutralized the identification element he must work with, the more free he is. With traditional typefaces and lots of gingerbread in the identification, there is a real problem, because that element must be the first consideration. How can it be avoided?

We didn't want that. We wanted the identification element very easy to handle and neutral enough in its character to enable it to live with almost anything else that was going on. We tested the logotype by trying to use it in that way. I think that many of the manual examples bear that out.

Q: Did you and Mr. Danne consider Avante Garde as an alternative to Helvetica or to Futura as a second choice?

A: That's a good question. Avante Garde is to me representative of a whole group of typefaces of recent design that are excellent. I think these

typefaces represent the wave of the future in terms of the available alternatives in typesetting, but they all seem to—I may be wrong about this in terms of Avante Garde, but I think a lot of them—have a built-in limitation in terms of being excessively styled and therefore going out of style quickly. If they are in style now, sometime they'll be out of style. I think of Helvetica, Times Roman, Garamond, and Futura as classics. I don't believe that they will be out of style fifty years from now. I think they're too good to go out of style. If I were designing for a chain of department stores or some such thing, for someone who was involved in style, and I could reasonably expect that they might change their whole identification program in five years anyway, and I wasn't trying to do something for all time, then I would say that Avante Garde is terrific, and that whole range of alternatives is terrific. But that's really the difference for me.

Q: What about Standard? That's a long-established face that has the strength of Helvetica.

A: It's very similar to Helvetica. It was a predecessor to Helvetica. I think the difference between the two is just a matter of shading and interpretation. Helvetica seems to have a more classic form and to hold up better overall than the other does. The letter spacing, for instance, is much easier in Helvetica than in Standard. The straight stroke endings, as opposed to the slanted stroke endings of Standard, and so forth, make Helvetica a lot more neutral and a lot easier to handle in relationship to other things that are going on. So that would be the difference for me.

Q: You gave the impression that Hel-

vetica is sort of the end-all of type. In fact, in long publications, Helvetica is a difficult type to read.

A: I agree.

Q: Therefore, a serif type would be much better.

A: Well, in the NASA manual, we suggested two serif faces for text matter. Those two faces were really in there for very complicated material and very long material. I agree with you that sans serif lettering is harder to read in a long text.

Q: But there are very few books published with sans serif type—hardly any.

A: That's true. Studies have been done on this over and over again. The scientists I have read say that serif faces are more readable by virtue of cultural phenomena, not physiological phenomena. The eye and the mind are perfectly capable of handling the sans serif type. The reason that serif type is easier on the eye, if you will, is that it is more familiar. Everyone reads newspapers, everyone reads books, all of which are traditionally set in a serif face, so we all have been conditioned over a lot of years to think that that's the way it should be. When we run up against the other thing, it's a change that's hard for the head to accept. And yet, in spite of the fact that we've had so much sans serif lettering around us in the past ten or fifteen years, I don't think we're at a point yet where the majority of people are able to make that transition and handle it as well as they can the serif face. I agree with you completely that you should, when you get into those situations, use a traditional book face and use it in a contemporary way, but

the letter forms themselves are what seem to put a person off reading a long text in sans serif.

Q: To give a contemporary outlook, the typeface would have to be sans serif, whereas to achieve a Rococo or Baroque look, it's definitely a serif face. I would think that's sort of limiting.

A: Well, in principle you have to be right, but on the other hand, there's a lot of evidence around to say that a very traditional typeface can look just as contemporary as a sans serif face if it's handled properly.

I think that's where the talent of the designer comes in. This idea of being locked up with one typeface is a bad thing, because it's entirely possible to turn all of these accepted rules of thumb completely around and make them work positively. That's one very good example of it, I think.

Q: Have there been any psychological studies on quick identification from sans serif to serif?

A: Yes, in fact I have some of that material that I had to use in connection with signage requirements. For signage, the sans serif letter is definitely the preferred letter form—here from a physiological point of view, because at a certain distance, a sans serif letter will hold up, whereas a serif letter will turn to a blob. Serifs tend to diffuse and get larger than they are in relation to the letter form and therefore impair the legibility of the letter form. So in that sense it's better with the sans serif.

I don't know whether I got across that whole business about typography becoming a design element. I think it's a cultural phenomenon that the eye rests

very easily on Times Roman even though it's a serif letter form that's rather complicated, has a lot of planes and edges and curliques and so forth in it. The eye will rest more easily on Times Roman than it will on Palatino. I can't really explain that, except that people have been acclimated to the Times Roman over more time than they have the Palatino; and the Palatino is more stylized. It's less consistent in the way it's drawn than the Times Roman is, so it has hard edges and soft edges combined, whereas the Times Roman is a pretty smooth letter form. It's hard to think of using Palatino over and over and over again, but Times Roman is pleasing even in very large doses.

I hope we've been able to explore effectively the positive and negative aspects of design or graphics standards manuals today. I think it is always interesting and informative to look at a real ongoing program—such as NASA's—and try to relate specific problems to what someone else is doing.

For all the reasons mentioned previously, I believe that these manuals are an inevitable aspect of designing for large organizations of any sort in the future. My hope is that we, as the designers responsible for implementation, can keep a positive perspective on the need for and the use of these manuals, realizing that although a certain part of our effort will not be "creative" in the purest sense, this effort is part of a larger plan or program. Having that in mind, we can concentrate on the real challenge of our everyday work, the sensitive, effective, and appropriate handling of content.